



**Golden State**  
**Water Company**  
A Subsidiary of American States Water Company

# 2016

## West Orange County Water System

Consumer Confidence Report  
on Water Quality for 2015



### Providing Quality Drinking Water in California Since 1929

**Golden State Water Company** is pleased to present our Annual Water Quality Report for 2015.

Bringing you clean drinking water is serious business, and our team of more than 500 water professionals is committed to ensuring you have reliable, high-quality water service available whenever you need it.

It's important for our customers to remain informed about the safety of the water that you and your family drink. You should rest assured knowing that Golden State Water tests water delivered to its customers to ensure it meets quality standards.

Golden State Water strictly adheres to federal and state drinking water quality guidelines required by the United States Environmental Protection Agency (USEPA), the State Water Resources Control Board's Division of Drinking Water (DDW) and the California Public Utilities Commission (CPUC). We routinely sample to monitor water quality, testing for more than 230 elements in our water supplied to and in the distribution systems. In 2015 alone, we invested more than half a million dollars on laboratory testing to meet regulatory standards.

In the uncommon event that drinking water standards are compromised, we take immediate action, notify customers timely and restore normal service.

We pride ourselves on getting the job done right, and our team of experts strives to provide consistent water service and prevent water quality issues by regularly investing to maintain and improve our water system. This ensures our ability to provide you with high-quality drinking water—24 hours a day, seven days a week—is not compromised.

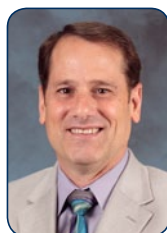
Our customers have always been our top priority, and we are always available to provide you with information or answer any questions you may have about your water service. We encourage customers to visit [www.gswater.com](http://www.gswater.com) and follow us on Twitter @GoldenStateH2O. In addition, Golden State Water's Customer Service Representatives are available around-the-clock for customers at 1.800.999.4033.

We have proudly served California for more than 85 years, and we currently provide water to approximately 1 million customers throughout the state. Given current drought conditions we encourage customers to be mindful of responsible water use. On behalf of the men and women at Golden State Water who serve you, thank you for being a valued customer.

Sincerely,



**Robert Sprowls**  
President and Chief Executive Officer  
Golden State Water Company



**Ken Vecchiarelli**  
General Manager, Orange County District  
Golden State Water Company



### About the Company

Golden State Water Company, a subsidiary of American States Water Company (AWR), provides water service to approximately one million Californians located within 75 communities throughout 10 counties in Northern, Coastal and Southern California. The Company also distributes electricity to more than 24,000 customers in the Big Bear recreational area of California. AWR's contracted services subsidiary, American States Utility Services, Inc., provides operations, maintenance and construction management services for water and wastewater systems located on military bases throughout the country.

# Drought in California

Although some parts of the state received much-needed rain and snow during the winter and spring seasons, California remains in a drought emergency and Golden State Water continues to encourage all customers to use water responsibly. Earlier this year, the State Water Resources Control Board (State Water Board) adopted a revised emergency regulation to extend drought restrictions through October 2016, and adjusted the state-issued conservation mandates for some water systems based on factors such as climatic conditions, population growth and water supply investments. Please visit [www.gswater.com/drought](http://www.gswater.com/drought) to view the current water-use restrictions and state-issued conservation mandate for your community.

## Where Does My Water Come From?

Water delivered to customers in the West Orange System is a blend of groundwater pumped from the Orange County Groundwater Basin and imported water from the Colorado River Aqueduct and the State Water Project (imported and distributed by the Metropolitan Water District of Southern California). The Orange County Groundwater Basin stretches 350 square miles from the Orange County line at Seal Beach and Long Beach, along the coast down to the El Toro "Y" and east to Yorba Linda.

## Glossary of Terms

### Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the public health goals and maximum contaminant level goals as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

### California Notification Level (NL)

Non-regulatory, health-based advisory levels established by the Division of Drinking Water (DDW) for contaminants in drinking water for which an MCL has not been established.

### Maximum Contaminant Level Goal (MCLG)

The level of contaminant in drinking water below which there is no known or expected risk to health. Maximum contaminant level goals are set by the United States Environmental Protection Agency (USEPA).

### Maximum Residual Disinfectant Level (MRDL)

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

### Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

### Primary Drinking Water Standard (PDWS)

MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

### Public Health Goal (PHG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. Public health goals are set by the California Environmental Protection Agency (CalEPA).

### Regulatory Action Level (AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

## Cross Connection Control Program

Golden State Water's Cross Connection Control Program provides a level of certainty that the water in the company's distribution system is protected from possible backflow of contaminated water from commercial or industrial customers' premises. For additional information, visit <http://www.gswater.com/protecting-our-drinking-water/>.

## Hydrant Flushing

Hydrant flushing is an essential maintenance procedure that all water providers must perform periodically to ensure the delivery of water that meets state and federal drinking water standards.

Even in drought conditions, flushing is a necessary part of maintaining the water system and the quality of the water within it. Golden State Water has modified procedures, given the current drought in California, to minimize the amount of water released during flushing activities. Water

## If You Have Questions – Contact Us

For information about your water quality or to find out about upcoming opportunities to participate in public meetings, please contact our 24-hour Customer Service Center at 1-800-999-4033. Visit us online at [www.gswater.com](http://www.gswater.com) or email us at [customerservice@gswater.com](mailto:customerservice@gswater.com).

Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo o hable con alguien que lo entienda bien.

used for flushing represents less than 1 percent of the total water usage in each of our water systems.

For more information about hydrant flushing, visit <http://www.gswater.com/flushing-info/>

## For People with Sensitive Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those individuals with cancer undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly populations, and infants, can be particularly at risk from infections. These people should seek advice from their health care providers.

The USEPA and Centers for Disease Control issue guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants. To obtain a copy of these guidelines, please call the USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

## Connect with us to learn more!

Visit [www.gswater.com](http://www.gswater.com) to learn how to:

- ▶ Access the latest Water Quality Report for your area
- ▶ Get the latest updates and news regarding the drought and state/local restrictions
- ▶ Learn more about water-use efficiency, including programs and rebates in your area
- ▶ Understand your water bill and learn about payment options
- ▶ Obtain information about programs for low-income customers (CARW)
- ▶ Sign up to receive email updates about your water service.

For additional information, please contact our 24-hour Customer Service Center at **1-800-999-4033** or email us at [customerservice@gswater.com](mailto:customerservice@gswater.com).

## Measurements

Water is sampled and tested consistently throughout the year to ensure the best possible quality.

### Contaminants are measured in:

- ▶ Parts per million (ppm) or milligrams per liter (mg/L)
- ▶ Parts per billion (ppb) or micrograms per liter (µg/L)
- ▶ Parts per trillion (ppt) or nanograms per liter (ng/L)
- ▶ Grains per gallon (grains/gal) – A measurement of water hardness often used for sizing household water softeners. One grain per gallon is equal to 17.1 mg/L of hardness.
- ▶ MicroSiemens per centimeter (µS/cm) – A measurement of a solution's ability to conduct electricity
- ▶ Nephelometric Turbidity Units (NTU) – A measurement of the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person.
- ▶ PicoCuries per liter (pCi/L) – A measurement of radioactivity in water.

### If this is difficult to imagine, think about these comparisons:

Parts per million:	Parts per billion:	Parts per trillion:
1 second in 12 days	1 second in 32 years	1 second in 32,000 years
1 inch in 16 miles	1 inch in 16,000 miles	1 inch in 16 million miles
1 drop in 14 gallons	1 drop in 14,000 gallons	10 drops in enough water to fill the Rose Bowl



# YOUR WATER MEETS ALL CURRENT FEDERAL AND STATE REQUIREMENTS

## West Orange County Water System - Source Water Quality

Primary Standards - Health Based (units)	Primary MCL	PHG (MCLG)	Range of Detection	Average Level	Most Recent Sampling Date	Typical Source of Constituent
<b>Turbidity</b>						
Highest single measurement of the treated surface water (NTU)	TT = 1.0	n/a	NA	0.04	2015	Soil runoff
Lowest percent of all monthly readings less than 0.3 NTU (%)	TT = 95	n/a	NA	100	2015	Soil runoff
<b>Inorganic Constituents</b>						
Aluminum (mg/L)	1	0.6	ND - 0.24	ND	2015	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (µg/L)	10	0.004	ND - 4.5	ND	2015	Erosion of natural deposits; runoff from orchards, glass and electronics production wastes
Barium (mg/L)	1	2	ND - 0.13	ND	2015	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Fluoride (mg/L)	2.0	1	0.43 - 1.0	0.51	2015	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Hexavalent Chromium (µg/L)	10	0.02	ND - 3.13	ND	2015	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Nitrate [as N] (mg/L)	10	10	ND - 8	3	2015	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Perchlorate (µg/L)	6	1	ND - 4.6	ND	2015	Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosions, flares, matches, and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store or dispose of perchlorate and its salts
<b>Volatile Organic Constituents</b>						
1,1,2-Trichloro-1,2,2-trifluoroethane (mg/L)	1.2	4	ND - 0.6	ND	2015	Discharge from metal degreasing sites and other factories; drycleaning solvent; refrigerant
<b>Radioactive Constituents</b>						
Gross Alpha Activity (pCi/L)	15(a)	(0)	ND - 4	ND	2015	Erosion of natural deposits
Gross Beta Activity (pCi/L)	50(b)	(0)	ND - 6	ND	2015	Decay of natural and manmade deposits
Uranium (pCi/L)	20	0.43	ND - 12	6	2015	Erosion of natural deposits
Secondary Standards - Aesthetic (units)	Secondary MCL	PHG (MCLG)	Range of Detection	Average Level	Most Recent Sampling Date	Typical Source of Constituent
Aluminum (µg/L)	200	n/a	ND - 240	ND	2015	Erosion of natural deposits; residue from some surface water treatment processes
Color (units)	15	n/a	ND - 3	0.4	2015	Naturally-occurring organic materials
Chloride (mg/L)	500	n/a	16.7 - 101	65.1	2015	Runoff/leaching from natural deposits; seawater influence
Manganese (µg/L)	50	n/a	ND - 45	27	2015	Leaching from natural deposits
Odor---Threshold (units)	3	n/a	ND - 32(c)	2	2015	Naturally-occurring organic materials
Specific Conductance (uS/cm)	1600	n/a	396 - 1050	565	2015	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	500	n/a	36.6 - 261	118	2015	Runoff/leaching from natural deposits; industrial wastes
Turbidity (units)	5	n/a	ND - 0.24	ND	2015	Soil runoff
Total Dissolved Solids (mg/L)	1000	n/a	238 - 665	507	2015	Runoff/leaching from natural deposits
Other Parameters (units)	Notification Level	PHG (MCLG)	Range of Detection	Average Level	Most Recent Sampling Date	Typical Source of Constituent
Alkalinity (mg/L)	n/a	n/a	120 - 205	178	2015	
Calcium (mg/L)	n/a	n/a	19.9 - 118	84.2	2015	
Hardness [as CaCO3] (mg/L)	n/a	n/a	57 - 380	290	2015	The sum of polyvalent cations present in the water, generally magnesium and calcium; the cations are usually naturally occurring
Hardness [as CaCO3] (grains/gal)	n/a	n/a	3.3 - 22	17	2015	
Magnesium (mg/L)	n/a	n/a	1.7 - 27	16	2015	
pH (pH units)	n/a	n/a	7.7 - 8.8	8.1	2015	
Potassium (mg/L)	n/a	n/a	1 - 5	3	2015	
Sodium (mg/L)	n/a	n/a	32 - 104	47	2015	Refers to the salt present in the water and is generally naturally occurring
Unregulated Drinking Water Constituents (units)	Notification Level	PHG (MCLG)	Range of Detection	Average Level	Most Recent Sampling Date	
Chlorodifluoromethane (HCFC-22)	n/a	n/a	ND - 0.37	0.05	2015	
Vanadium (µg/L)	50	n/a	ND - 4.4	2.29	2015	
Molybdenum (µg/L)	n/a	n/a	3.5 - 8.4	5.65	2015	
Strontium (µg/L)	n/a	n/a	182 - 808	562	2015	
Chlorate (µg/L)	800	n/a	20 - 390	130	2015	

## West Orange County Water System - Distribution Water Quality

Microbiological Constituents (units)	Primary MCL	PHG (MCLG)	Value		Most Recent Sampling Date	Typical Source of Constituent
Total Coliform Bacteria ≥40 Samples/Month (Present / Absent)	More than 5% of monthly samples are positive	(0)	Highest percent of monthly samples positive was 3 %		2015	Naturally present in the environment
Disinfection Byproducts and Disinfectant Residuals (units)	Primary MCL (MRDL)	PHG (MRDLG)	Range of Detection	Average Level	Most Recent Sampling Date	Typical Source of Constituent
Chlorine [as Cl2] (mg/L)	(4.0)	(4)	ND - 1.98	1.02	2015	Drinking water disinfectant added for treatment
HAA5 [Total of Five Haloacetic Acids] (µg/L)	60	n/a	ND - 22	16	2015	Byproduct of drinking water disinfection
THMs [Total of Four Trihalomethanes] (µg/L)	80	n/a	ND - 62	42	2015	Byproduct of drinking water disinfection
Inorganic Constituents (units)	Action Level	PHG (MCLG)	Sample Data	90th % Level	Most Recent Sampling Date	Typical Source of Constituent
Copper (mg/L)	1.3	0.3	None of the 30 samples collected exceeded the action level.	0.39	2013	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

(a) MCL is based on Gross Alpha minus Uranium. (b) CDPH considers 50 pCi/L to be the level of concern for beta particles.

(c) Odor data reported is prior to chlorination or other process and is not necessarily representative of water received by customers.

ND = Not Detected CaCO3 = Calcium Carbonate This table includes data only on constituents that were detected.

# Source Water Assessment

Golden State Water conducted a source water assessment in 2003 for each groundwater well serving the customers of its West Orange County.

The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: active and historic gas stations, confirmed leaking underground storage tanks, dry cleaners, and repair shops.

The groundwater sources are considered most vulnerable to the following activities which have been associated with contaminants detected in the water supply: fertilizer, high-density housing, irrigated crops, pesticide/herbicide application, and sewer collection systems.

A copy of the assessment may be viewed at:

DDW Santa Ana District Office  
605 W. Santa Ana Blvd., Room 325, Santa Ana, CA 92701

or

Golden State Water Company, Anaheim Office  
1920 W. Corporate Way, Anaheim, CA 92801

You may request a summary of the assessment be sent to you by contacting:

DDW Santa Ana District Office at 1-714-558-4410

For more details, contact Sunil Pillai, Water Quality Manager, at 1-800-999-4033.

In December 2002, the Metropolitan Water District of Southern California (MWD) completed a source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to the following: increasing urbanization in the watershed, recreation, urban/stormwater runoff, and wastewater.

State Water Project supplies are considered to be most vulnerable to the following: agriculture, recreation, urban/ stormwater runoff, wastewater, and wildlife.

A copy of the assessment can be obtained by contacting MWD by phone at 1-213-217-6850, option 3.

## Laboratory Analyses

Through the years, we have taken thousands of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants in your drinking water. The table we provide shows only detected contaminants in the water.

Even though all the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of these substances were present in your water. Compliance (unless otherwise noted) is based on the average level of concentration below the MCL. The state allows us to monitor for some contaminants less than once per year because the concentrations do not change frequently. Some of our data, while representative, is more than a year old.

**Lead** — If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Golden State Water is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information about lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

**Fluoridation** — Fluoride has been added to the water that Golden State Water purchases from Metropolitan Water District of Southern California

(MWD). Customers should see no difference in the taste, color or odor of their water as a result of fluoridation. Fluoridation does not change the way you normally use water for fish, pets, or cooking. Parents and guardians of children who receive fluoride supplements should consult the child's doctor or dentist. For information regarding fluoridation of your water, please contact MWD at 1-213-217-6850, option 2 or visit the Division of Drinking Water's fluoridation website at [www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/Fluoridation.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml).

**Chloramination** — The water purchased by Golden State Water from Metropolitan Water District of Southern California (MWD) contains chloramine. Chloramine is added to the water for public health protection. Chloraminated water is safe for people and animals to drink, and for all other general uses. Three special user groups, including kidney dialysis patients, aquarium owners, and businesses or industries that use water in their treatment process, must remove chloramine from the water prior to use.

Hospitals or dialysis centers should be aware of chloramine in the water and should install proper chloramine removal equipment, such as dual carbon adsorption units. Aquarium owners can use readily available products to remove or neutralize chloramine. Businesses and industries that use water in any manufacturing process or for food or beverage preparation should contact their water treatment equipment supplier regarding specific equipment needs.

Should you have any questions or concerns regarding chloramine in your water, please contact MWD at 1-213-217-6850, option 3.

**Aluminum** — The secondary MCL for aluminum is set for aesthetic reasons and there is no health concern associated with the aluminum levels in this water system.

**Nitrate** — Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask for advice from your health care provider.

**Odor** — The secondary MCL for odor is set for aesthetic reasons and there is no health concern associated with the odor levels in this water system.

**Turbidity** — Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of surface water filtration.

**Unregulated Contaminant Monitoring** — Monitoring for unregulated contaminants helps the USEPA and the DDW to determine where certain contaminants occur and whether the contaminants need to be regulated.

## Risk to Tap and Bottled Water

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the layers in the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, which can pick up substances resulting from the presence of animal or human activity.

To be certain that tap water is safe to drink, the USEPA and the DDW prescribe regulations limiting the amount of contaminants in water provided by public water systems. United States Food and Drug Administration (USFDA) and DDW regulations also provide the same public health protection by establishing limits for contaminants in bottled water.

### Contaminants in Drinking Water Sources May Include:

- ▶ Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife
- ▶ Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming
- ▶ Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses
- ▶ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems
- ▶ Radioactive contaminants that can be naturally occurring or be the result of oil and gas production and mining activities

### Recent media attention has focused on water quality issues in Flint, Michigan,

where reports have highlighted health and infrastructure concerns related to elevated levels of lead in the drinking water. Golden State Water would like to assure customers that we test regularly to ensure the water we deliver to customers meets all state and federal drinking water standards. As your water provider, we take great pride in providing safe, reliable water to more than 1 million customers throughout California. All water providers are paying close attention to developments in Flint, which serve as a reminder of the importance to invest in water infrastructure, treatment and testing.

If lead was detected in any of the samples collected, the level will be reported in the Distribution Water Quality table.